

AN

*W. H. Lenthworthy.*

# ESSAY

On the Bilious, or Yellow

# FEVER

OF

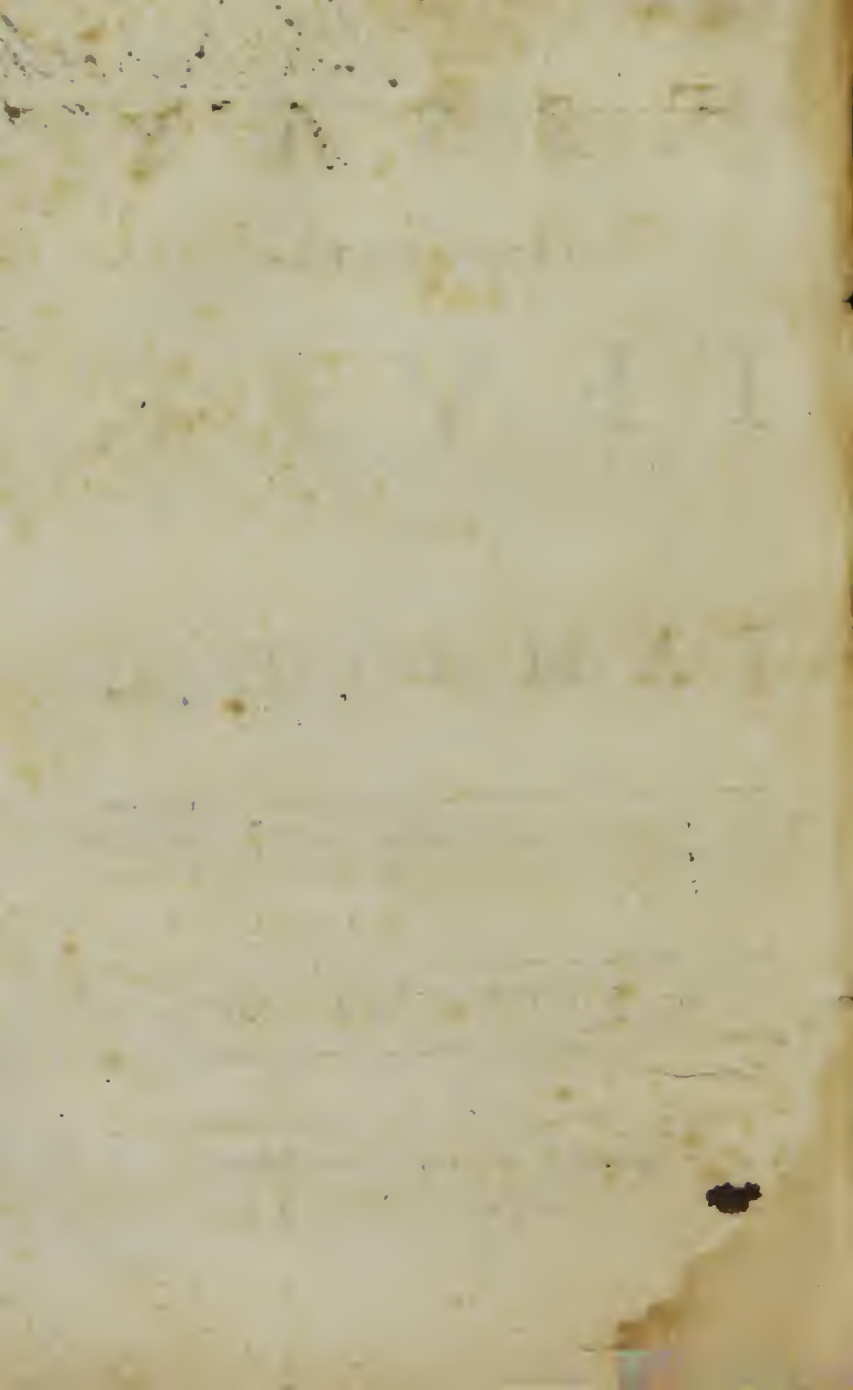
# JAMAICA.

*Petet autem novum quoque consilium, non ab rebus latentibus (istæ enim dubiæ & incertiæ sunt) sed ab his, quæ explorari possunt; id est, evidentibus Causis.*

A CORN. CELSI Præf.

By JOHN WILLIAMS.

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# P R E F A C E.

**T**HAT no one hath yet endeavoured to explain to the Public the Nature and Causes of this fatal bilious, or yellow Fever of Jamaica, is somewhat Strange; and it is the more Surprizing as we have had Physicians capable of doing it. Sure such a Task would not be unworthy of those learned Gentlemen Fortune hath placed above the necessity of practising Physick for a livelyhood!

To me it appears a Debt due to Mankind from every capable Person to communicate what may be useful to Society; and more particularly what tends to the immediate preservation of the Species.

When I have talk'd with some judicious Gentlemen about the Nature and Causes of this Fever; and mention'd my design of writing upon the Subject; the Answer I commonly received was, That the Disease was sufficiently known; but little could be done for the Patient: And that, in its greater Degree, this Fever was generally incurable.

But as Lord Bacon observes, to declare Diseases incurable is to establish Negligence and Carelessness as it were by Law, and to screen Ignorance from

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Reproach \*. *Whether the following Sheets will give any Light into this Disorder ; or whether the real Nature and Causes of this Disease ; together with the proper Method of treating it are pointed out, I leave to capable Judges to determine. Be the Success what it will ; the World ought not only to Excuse, but Applaud me ; because the real Motive that induced me to write upon this Fever was, a sincere desire to serve Mankind : Which desire will be gratified if this Essay should spur on others, perhaps more capable, to write upon the Subject.*

*What I have found by long and faithful Observation and Experience to be usefull or hurtfull I have pointed out. And if uncommon Success in the Cure of this Fever is any Proof of the Justness of my Practice, I have that to support it.*

*As I look upon the Aetiology of this Disease to be what is most wanted, I have confin'd this Essay chiefly to that ; touching but lightly on the Diagnostick or Prognostick : For these Parts of the practice of Physick, in this Disorder, are well known to all who have lived any considerable Time in the Country ; or have attended sick Strangers. Of the dietetick and therapeutick Parts I have said enough to those acquainted with Diseases : Had I said more it might not have render'd this Essay more usefull to those unacquainted with Medicines and Diseases.*  
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# P R E F A C E. v

*Some few Years ago when these Papers were wrote, we had several Advocates for the Alexipharmic or Sudorific Method: And as Wainright observes, we may conclude how fit they were to be trusted with the Patient's Life, who instead of curbing the too impetuous Motion of the Blood with cooling diluters, and moderate Evacuations, spur'd it on faster with their heating Cordials, and Alexipharmics. §*

*It appears to me that no Man, let his genius or stock of Learning be what it will, can be a judge of the Disorders of this Country without faithfull Observation and Experience; yet the Passion for Novelty is so great amongst us that some Persons sacrifice Life itself to it.*

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*quæ tanta insania Cives?*

*A new Comer whose Head is fill'd with Theory and darling Hypotheses, by some will be trusted before a Man who like honest and carefull Sydenham hath made himself acquainted with the Diseases of the Country, and prudently follows the Vestigia of Nature; never sacrificing his Patient to any favourite Hypothesis.*

*Another shocking Consideration is, that Reputation in the practice of Physick is not acquired by medicinal Knowledge, Experience, and those Accomplishments which render a Physician justly eminent in o-  
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*ther Places, but to the sanguine Endeavours of Party; so that Men's Lives are sacrificed to pique and prejudice; and that noble and usefull Art the practice of Medicine (heretofore the study of Princes) is now prostituted to the basest Ends!*

*To relieve a fellow Creature languishing under Disease or tortured with excruciating Pains, is great and Godlike! And whosoever is capable of doing this, must in the exercise of his Profession (in my Opinion) enjoy the greatest Pleasure the human Mind is capable of.*

*The Honourable Assembly hath wisely considered that the good, welfare and security of this Island depends greatly on the increase of its white Inhabitants; and to that End hath given (according to the accusom'd goodness and generosity of that Honourable House) the greatest Encouragement ever was given to Strangers to become Settlers in this Island. And should not we as ardently seek after Means to keep them alive when they do come here? I have seen several melancholy Instances of Strangers who, upon their first Arrival, by walking too briskly, and carelessly exposing themselves to the meridian Sun have fallen into this Fever.*

*Strangers have too great a prejudice to our Island which I would willingly remove by shewing them we have no malignant or infectious Air (as is generally imagin'd) but that the worst of our Disorders are caused by Errors in the Nonnaturals which may*  
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# P R E F A C E. vii

*be avoided; and prædisposing Causes in Northern Bodies which may soon be removed: And that this Fever of which they have so dreadful an Idea may be prevented, or cured.*

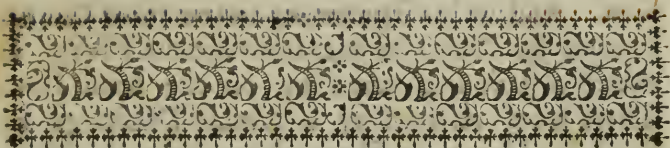
*Many Observations and Cases (several of which I have by me) might be added: But what is already wrote may be sufficient for a first Essay.*

*I conclude with addressing myself to the Reader, in that trite Quotation from Horace.*

*Vive; vale, si quid novisti rectius istis,  
Candius imperti: Si non, his utere mecum.*







A. N

# ESSAY

ON THE

## BILIOUS FEVER, &c.



THE bilious, or yellow Fever, so called from the yellow Appearance of the Skin (commonly most remarkable in the *Tunica conjunctiva*) seems to be a Disease not unknown to the antient Physicians, as is generally supposed: For whoever will take the Trouble to search *Hippocrates*, will not only find this Fever pretty well described, but also a proper Method of treating it.

In his Book *de Affectionibus*, he mentions a Fever with a Pain about the *Præcordia* and *Hypochonders*, particularly the right in the Region of the Liver; and when on the fourth or fifth Day, the Fever is more violent, the Pains increase and the Patient appears somewhat bilious or yellow.

low. And in his Epidemics in the third Constitution in *Thasus* he mentions ardent Fevers, in which a Jaundice came on on the sixth Day: These were relieved by a critical Discharge by Stool, or Urine, or Hæmorrhage from the Nose, or altogether; as he instances in his Patient *Heracrides*. The twelfth Patient, in the third Book of popular Diseases, was seized with a violent Fever in the begining, which ended with all the Symptoms of our yellow Fever, black Vomiting, Hiccup and bleeding at the Nose.

This Author mentions frequently those Symptoms, which are reckoned the Diagnostics or distinguishing Marks of this Disease; as the Vomiting of black Humours, which he says indicates sudden Death \* and a Fever with a concomitant Jaundice† which he represents as dangerous if the Jaundice comes on soon † which Remark holds good here: And further he adds in the same Aphorism, that in this Case a loose Belly is favourable. This also holds good in *Jamaica* for a spontaneous Diarrhœa coming on in the beginning of this Fever is always serviceable; and it proves very dangerous to stop it with Opiates or Alexipharmicks. Indeed the Fevers described by *Hippocrates* were not so soon determined; nor were his bilious or yellow Fevers so acute as ours; they terminating commonly in seven or nine Days, † sometimes in fourteen: This Difference probably is

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\* *Lib. Prænot.* † 1 *Epidem.* 11 120. *de Cris.* viii. 20 *Aph.* 4. 64. *de Cris.* iii. 5, 18, iv. 11. *Coac.* i. 172. *Aph.* 62, *Sec.* 4.  
 † *Quibus per Febres Morbus regius ante Diem septimum Obortus fuerit.*  
*egalum,* † *De Affect.* xiii. 9.

is to be attributed to the Difference of Climate and Manner of living.

*Celsus* the Prince of the Latin Physicians mentions particularly the Vomiting of black Humours, || and says in this Case the Belly ought to be moved. †

Amongst later Authors, I think *Hoffman* describes an ardent bilious Fever much like ours; and also the choleric Fever which we frequently have here in the latter End of the Year. ‡

I do not apprehend this Fever is what we call a local Disorder; for I have seen it upon the Coast of *Africa*, and am well informed that in the River *Benin* they have a bilious or yellow Fever acuter than what it was here at the Time of the Expedition to *Carthage*: The Persons seized with this Fever dying there in less than twenty four Hours. This Disorder is generally brought on by suddenly cooling the Body and checking Perspiration after hard Exercise in the Heat of the Sun; for when the Sailors go to cut Wood for the Ships use, they are obliged to row several Leagues against a Current and then jump into the Water in order to carry the Wood on Shoar. *Bontius* gives an Account of such a Fever in the *East-Indies*. Nor does this Fever appear to have any particular Constitution; for we have it at all Seasons of the Year, and one of the highest Cases I ever saw was that of a Gentleman who had it at a Time no other Person laboured under it.

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|| *Pessimum est Atrium vomere.*

† *His recte alvus ducitur.*

‡ *De Febribus acutis, Sec. 2. Ch. 2. a.*

This Fever being so general and fatal at the Time of the Expedition, People looked upon it as a Plague, and shunn'd the Sick as they would Contagion. And probably at that Time it might be contagious, for as *Bellini* observes “ *Febris Pestilens cum nempe Febris maligna privata, sit Popularis, eorum quos invadit, plerosque necans & contagiosa.*”

As to that Phænomenon yellowness of the Skin it ought not always to be reckoned a distinguishing Mark of this Fever, because it is a common Appearance in all Fevers where there is a strong Propensity of the Juices to Putrification, as the celebrated *Boerhaave* takes Notice †. Indeed in the bilious Fevers there is a deeper and more remarkable yellowness; and perhaps *Galen's* Opinion may be right when he says, ‘ *The Bile offends more or less in all Fevers.*’ Be that as it will, I have observed in the *Carribee Islands* and *North America*, different Sorts of yellow Fevers. Nay even in this Island of *Jamaica* I have observed different yellow Fevers: For in the Year 1744. after the Hurricane, several Persons laboured under a putrid remitting yellow Fever, arising from a manifest Change of the Air. In this Fever which I called a *central* Fever, dangerous nervous Symptoms soon came on, and Blisters, Camphire and Snake-root were serviceable: For the Pulse was low and oppress'd and the Extremities cool.

So there cannot be a greater, tho' general mistake, than to imagine all yellow Fevers of the same

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† *Homo qui humorum putredine laborat semper flavescit in cute exteriori, Prax. Med.*

same Genus ; and that they should be all treated in the same Manner, as shall be observed below.

Many pursue Doctor *Warren's* sudorific Method both in the Islands, and on the Continent of *America*, in some Parts it answers, in others is destructive.

*Laudatur ab his, culpatur ab illis.*

Several Practitioners object against this Method in different Places as too hot ; being, it seems, convinced by their bad Success that it will not answer, yet all apprehending but one Sort of yellow Fever, they follow implicitly Doctor *Warren's* Method or some other they are prejudiced in Favour of by hearsay only, and proceed, very frequently, contrary to the Endeavours of Nature and Indications of the Pulse destroying the Patient *secundem Artem*: fatal Mistake !

Doctor *Warren* wrote concerning a malignant Fever in *Barbadoes*, and I don't doubt but that judicious Gentleman hath laid down the best Method he knew of treating it. I never read the Treatise ; but I had some Acquaintance with the Gentleman, and believe he justly merited the great Character he bore.

Shall the yellow Fever of *Jamaica* agreeing perhaps only in one Phænomenon (yellowness) with that of *Barbadoes* ; or the Fever on the Continent (may be a third Species of yellow Fever) be treated after the same Method, when Experience, the best Guide, convinces us they require different Methods of Cure ? For Instance, those seiz'd with this Fever in *Jamaica* generally have a full frequent

quent Pulse to the very last ; nor is it sunk much by Evacuations ; which in the Beginning they bear very well. A cooling Regimen, solutive and diluting Medicines succeed best, and the Disease soon arrives to its *Acme* or State, and consequently is soon determined.

In *Virginia* and other Parts of the Continent, the Pulse sinks so as to be vermicular or scarce perceptible whether you use Evacuations or no. The strongest Alexipharmics and Sudorifics (which given in *Jamaica* in this ardent Fever I treat of would bring on a *Delirium* or *Phrenzy*, and destroy the Patient) will scarce raise the Pulse tho' given in immoderate Doses. In *Virginia*, we are to promote, at all Events, the *Concoction* of the febrile Matter by the Use of Alexipharmicks and Sudorifics, although by these we translate that febrile Matter to the Brain, bring on a *Coma* or *Delirium*, which is often the Case, we must keep up the Pulse until the Crisis ; which generally happens on the seventh, ninth, and sometimes the eleventh Day. In *Jamaica* all we can do is little enough to suppress the Fever ; we give all such Things as powerfully cool, and condense the Blood, thereby preventing the *Formation* of the Fever.

In *Virginia* nothing is so serviceable in the Remissions as the *Peruvian Bark*, or even in the Height of the Fever (after its first *Stadium*) without Regard to the Exacerbations or Remissions which, by the Way, is contrary to Practice.

In *Jamaica* the Bark in all Forms hath frequently been tried in the Remissions, but without Success. Indeed it generally does much Harm.

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Are not these Diseases and Methods of Cure diametrically opposite to each other? yet are they both yellow Fevers.

What hath been said may be sufficient to prove that there are different yellow Fevers; and that yellowness of the Skin is not always a distinguishing Mark of, and particular to this ardent bilious Fever.

Let us now consider the Nature and Causes of this dreadful Fever of *Jamaica*, heretofore so fatal to Strangers. Let us trace it up to its Origin if we can: For, as the great Doctor *Mead* observes †, “ The first Step towards the Cure of a Disease is to know its Origin. ” Let us then reason from Effects to their Causes, that is from the present Symptoms or Appearances, let us find the real Disease: at least let us honestly endeavour it for the good of our fellow Creatures.

We first know by Experience what Evacuations Medicines and Regimen succeed best in this Disease: And then, as judicious *Sydenham* observes, we endeavour from the Nature of the Disorder to account for their Effects.

The distinguishing Symptoms, or *Diagnostics* of this Disorder are, besides what is common to Fevers, great Anxiety, Heat and Pain at the *Scrobiculum Cordis*; proceeding from an Obstruction of the Bile and some Degree of Inflammation of the Liver which frequently causes a Jaundice, bilious Vomitings, or Ejections, or both; sometimes an acute, sometimes a dense Pain about the Region of the Liver, all manifest Signs of Inflammation and

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† Preface to his *Essay on Poisons*.

and strong Propensity of the Juices to Putrifaction. Sometimes we find the right *Hypochondr* tumified, frequently hard. Many cannot bear Pressure on the right Side, or to lie on the left, as may be observed on proper Examination, and a nice Attention to the Complaints of the Patient. From these Symptoms to worse, — strong and continual Convulsions of the *Diaphragma* intercostal Muscles, and Stomach, *Æruginose* Vomiting, — then vomiting of black adust Blood, appearing like the Grounds of Coffee mixed with acrid unfinished Bile, the Juices of the Stomach and Pancreas both very sharp, — bleeding from the Emunctories, or Delirium, or Phrenzy, general gangrene and Death. These are indeed dreadful Symptoms; but these it is our Business to prevent, and I apprehend we may point out Causes adequate to these Effects, without accusing our Air of Malignancy; without the *aliquid Divinum* of *Hippocrates*, or occult Venom &c, and that in a plain and mechanical Manner.

I am not ignorant, that to understand the remote Causes of Diseases, as what they call the morbidic Disposition of the Air, the poisonous Effluvia or subtle *Miasmata* that occasion Fevers, or are said to occasion them, nor that particular bad Contexture of the contaminated Juices consequent, is not absolutely necessary to the Cure of Fevers. As *Pitcairn* observes, “ No Matter whether Fevers are occasioned by the *Miasma* from  
“ without, or the Humours be changed within  
“ to morbidic Matter, for all Things will happen  
“ in the same Manner.”

It is sufficient if we know how to remove that Dyscrasy of the Blood, to alter or to divide and attenuate the præternatural Cohesions, correct its Acrimony ; and render it soft, smooth and balsamic as in a State of Health. It is enough generally if we understand the present Phænomena and can ascertain its Genus by the present concomitant Symptoms. Yet I believe it will not be denied, that sometimes a Knowledge of the remote and primary Causes serves to illustrate the Nature of the Disorder ; and from that Knowledge we may possibly draw Indications for the Cure.

The Causes of this Fever seem to be a sudden Check to Perspiration, a Redundancy of Bile, than which nothing is more likely to happen to Strangers, surely a most dangerous Plethora ! Stoppage of some natural Evacuations, drinking large Draughts of cool Liquors when the Body is overheated, vehement Exercise, hard Drinking, &c. but above all, Exercise that is violent or long continued in the Heat of the Sun.

Among the Prædisposing Causes we may reckon the rigid Fibres and thick Blood of *Europeans* and *North Americans*, their almost callous Pores which will not permit, if the Expression may be used, an Evaporation equal to the effervescence raised within ; whence the thin fine parts only are drained of, or transude, whilst the more gross and fuliginous are confined in the Vessels, or block up the Passages.

These are, at least in my Opinion, sufficient Causes to deduce all the dreadful Symptoms from

we see in the yellow Fever, without having recourse to Malignancy, or occult Venom, &c.

*e. g.* Should a Person sanguine and plethoric with rigid Fibres and stiff contracted Pores (as most of the Northern People have) use any vehement Exercise in the Heat of the Sun; by this Heat, and the Action of the Muscles, the Blood would be greatly rarified, and the Celerity of its Motion increased; now the Tense muscular Coats of the Arteries strongly contracting, impel forward the Blood heated and rarified, faster than it can pass into the Veins; the thinner fine Fluids from the extreme Vessels on the Surface of the Body are in a great Measure exhausted: For this Consumption, as *Sanctorius* takes Notice † must be the Consequence of any violent Exercise: And here can be only of the finer Fluids; for, as was before observed, the Pores are too stiff, springy and contracted to admit through the grosser Particles, whence the Serum is inspissated; and by the increased Velocity of the Blood's Motion too intimately mix'd and blended with the *Craassamentum*; and the more so as the thinner Parts are more exhausted; whence its disposition to stagnate, stop to the Circulation of the *Lymph*, general glandular Obstruction. Or, which is often the Case I beleive, when the Blood is rarified and expanded beyond the natural Diameter of the Vessels, the Arteries forcibly, and perhaps suddenly contracting, force some of the globular Part of the Blood into the *Arteria serosa primi Generis*

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† *Exercitium Animi & Corporis violentum reddit Corpora levioris ponderis.*

*neris*, their Coats being much less capable of Resistance than the sanguine Arteries consequently the more liable to distend: And some Part of the yellow Serum in the *Vasa serosa primi Generis*, is forced into the still finer and weaker Vessels *Arteria serosa secundi vel tertii Generis*, or *Vasa Lymphatica*; whence that moderate yellowness in the Beginning of this Fever.

The Liver, which is a soft and yeilding Viscus, being less capable of Resistance than many other Parts of the Body, the heated rarified Blood is thrust into it in greater Quantity than usual; and some part of the Blood is forced into the lateral Vessels of the *vena Porta* along with the Bile; whence a partial Obstruction, and inflammation of the Liver. The Bile is regurgitated by the *Vena cava* whence a Jaundice, a deeper yellow.

From this Extravasation, or ingress of Fluids, whose compounding Parts are too large to pass the Vessels, must arise a most dangerous glandular Obstruction, stop to the Circulation of the *Lymph* &c. and of Consequence a dangerous Fever: For the Blood now hath no longer *Lymph* to cool and dilute it; But is rendered more acrid by the Mixture of the Bile; whence a Putrification of the Juices, an Erosion of the Vessels; or great Relaxation from the long continued *Plethora*; their contractile restitutive Power being almost totally destroy'd; as well as the Texture of the Blood; whence bleeding from all the lateral Vessels general gangrene, Death.

That this Extravasation of the Blood frequently happens; nay a rupture of the Arteries themselves, (whose Coats bear a much greater Proportion to

their Diameters than the *Arteria serosa primi Generis*; And these again bear a much greater Proportion to their Diameters than the *Arteria serosa secundi vel tertii Generis &c.*) is pretty evident; for several Persons have dropp'd down dead through excessive Heat of the Sun in *Philadelphia* and other Countries where the great Heats are not so usual, nor Fibres sufficiently relaxed to give way to the sudden Expansion of the Blood in the *carotid* and *cervical Arteries*. Several after Fighting or other vehement Exercise, have died appoplectic by drinking cold Water, or cooling too suddenly; which proceeded from too sudden a Contraction of the Arteries before mentioned, with their too great springiness and stiffness; for did they sufficiently dilate to the expansive Force of the Blood this would not happen.

Where this Extravasation happens within the *Cranium*, it is plain the immediate Consequence must be sudden Death: And this often happens in the Course of this Fever, except prevented by plentiful Bleeding in the Beginning, or a large *Hæmorrhage* from the Nose.

But if an Inflammation happens from the Causes before observed in the Liver (which seems to be frequently the Case) an ardent Fever with a Jaundice must succeed; from whence may be deduced all the dire Symptoms of this Fever, without that vague Notion of Malignancy, as the learned *Boerhaave* observes † “ From the various Kind  
“ of Jaundice and Affections of the Liver may be  
“ understood many Symptoms occurring in acute  
Diseases

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† *Aphor. Pract.*

“ Diseases, whose Reasons being unknown, have  
 “ given Birth to all the Tales about Malignancy  
 “ in Diseases; for from the Liver do depend all  
 “ the Bowels of the *Abdomen*, and consequently  
 “ all their Actions of Digestion, Assimilation and  
 “ Nutrition, &c.” He says also that great Anxiety (so remarkable in this Fever) proceeds from stagnating Bile \*. Most of the antient Physicians, *Greeks* and *Arabians* reckoned Bile the Cause of malignant and putrid Fevers. *Barbette* of Fevers in general, says very well, “ *Partes affectæ sunt Ventriculus Intestinum duodenum, Hepar, Pancreas, Glandulæ mesenterii Causa succus pancreaticus non bene sese misceat, cum Bile chyloque; sic Bilis præternaturaliter regurgitat per Venam cavam ad Cor totumque Corpus.*”

*Bellini* reckons amongst the principal Causes of Fevers whatever accumulates Bile †.

*Hippocrates* observes that Persons labouring in the Sun, such as Mowers and Travellers, overheat themselves in Summer Time; and by that Means throw off too great a Quantity of the thinner Part of the Blood, by which Means the thick Blood of those Persons does not pass through the Liver, but is there accumulated. What so often brings on this Fever as overheating the Body?

The Constitution of the Air, and the Diseases in the *East-Indies*, according to *Bontius*, seem to resemble the Air and Diseases of this Country. He remarks that the Liver in that Country, is  
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\* Hinc ob Stagnationem Bilis Anxietas oriebatur donec moriebantur Ægri.

† De Febribus.

very often inflamed by the pernicious Custom of drinking *Arrack* (very common amongst the Sailors) and afterwards lying down exposed to the Air and Dews, and drinking, when much heated, large Draughts of cold Water; from which Obstruction and Inflammation of the Liver, and an acute Fever frequently mortal.

His Account is so exactly parallel to the Case of our *Brittish* Sailors in the *West-Indies*, by a too free Use of Rum, that I have quoted it below in his own Words †. *Bontius* observes that the Jaundice is often fatal in that Country: And in all these Cases, where the Liver is affected, he attempts the Cure with Phlebotomy, solutive Purges and Diuretics.

Let us now consider the Mechanism of the Liver, its connexion with the other *Viscera*, the Nature of the Bile, and whether it is not very probable a Stagnation may happen frequently in the fine Ramifications of the *Vena porta*. The Liver, as before observed, is a soft yielding Gland: From which loose Texture I suppose an Obstruction

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† Nullum Viscus frequentius in his Regionibus infestatur quam jecur: quod prætermissa jam toties dicta, Vicius Ratione mala, a potu istius maledicti Arac, non tantum in temperamento immutatur, sed etiam in Substantia sua corrumpitur: Dum enim ejus hauritu Ebriosi isti excalescenti; ingentem Aquæ copiam in Ventriculum ingerunt, ut conceptum Æstum restinguant, dein humi tanquam Pecudes procumbunt, & in Navibus se rori (qui post secundam aut tertiam Nocti. horam copiose hic cadit) exponunt: Unde venenatos KAPORES è Terra erumpentes, intra Corpus recipiunt, & sic Obstructionem Hepatis facillimè incurrunt, cui adest tensiva in Hypochondrio dextro gravitas, dolorque obtusus ac quasi pondere premens: Difficilis quoque adest spiratio, propter gravitatem visceris, Diaphragma deorsum trahentis, cui mediante Ligamento suspensorio annectitur: Hæc infarctio si perseverit, humor Hepar obstruens, dum non ventilatur facillimè putrescit: Unde Febbris etiam oritur ac ipsius Hepatis Inflammatio.

tion and Inflammation does not always give acute Pain. It covers the upper Side of the Stomach whence that *Nausea* and Sensation of Weight at the Stomach; also Vomiting; is connected to the *Diaphragm*, whence that dangerous Symptom Hiccup, as *Hippocrates* takes Notice\*.

The Liver, besides its Vicinity, hath an immediate Communication by Blood Vessels; and derives its Nerves from the same Stock with most of the Bowels of the *Abdomen*; and the greatest Part of the Blood of the whole *Abdomen* passes through it. From its situation then, Connexion and use, it becomes obvious, that terrible Symptoms must necessarily arise from an ardent Fever, caused by an Inflammation of the Liver; especially in this hot Climate where the Juices so soon incline to putrify †.

As to the Bile, when it offends in Quantity and Quality both, it appears to be an Agent sufficient of itself to cause all the Train of terrible Symptoms seen in this Fever. For the Bile consists of Oil and a penetrating sharp Salt; is soon made more sharp as well as increased in Quantity, according to *Galen's* Observation, by Heat and an increased Circulation, is soon disposed to putrify; when it mixed with the Blood it turns the whole Mass into Putrefaction, and is the Cause of a mortal Fever. The excellent *Boerhaave* says *Nil enim plus quam Oleum acre alcalinum gangrænam facit. Acris Bile*, seems to be here that *Oleum acre alcalinum*. The

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\* At Jecore inflammatione laborante succedit Singultus. Sect v. Aph. 58.

† Scimus omnem calorem Humorū exsiccare, & ad putredinem aptos reddere, & hoc Verum Fundamentum est gangræne *Boerhaave* *Prax. Med.*

The same Author on a particular *Gangrene* (which I suppose may hold good in a general one) says: "A *Gangrene* in an ardent Fever and the " *Plague* is incurable, because in these Cases it " suddenly turns to a Mortification; and is the " hardest of all to be cured (in acute Disorders) in oily alkaline or bilious Dispositions †."

That a Stagnation of the Blood in the fine Ramifications of the *Vena porta*, may very frequently happen either (as before was observed) from a sudden Contraction of the Vessels upon the greatly heated and rarified Blood, by which Means some of the Blood Globules are forced into the lateral Vessels with the Bile, and being too large to pass occasion an Obstruction, Inflammation and Jaundice &c. as before: Or (which is more likely) as the *Vena porta* discharges the Duty of an Artery, but hath not so strong a muscular Coat as an Artery of equal Diameter; together with a slower Motion of the Blood, the Blood drained too much of its Serum stagnates in the extreme Branches of the *Porta* where they are inflected to form the beginning Branches of the *Cava*: The Blood is drained of the Serum by the Glands of the *Abdomen* before it arrives at the Liver; and the Liver itself is stock'd with numberless *Lymphaticks* at the Entrance of the *hepatic Artery*: So that there is a great probability the Blood may arrive in the Liver according to the foremention-  
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† *Gangrena in Febre ardente & peste est incurabilis quia cito in putredinem vergit, si temperies oleosa alkalina vel biliosa, in Morbis cutis pessimum est.* Boerhaave *Prax. Med.*

ed Remark of *Hippocrates*, too thick or too much drained of its Serum. That the Blood's Circulation is obstructed in the Liver appears from the following Observations. In Subjects who died of this Disorder, the Liver was increased in Bulk and greatly inflamed : On the concave Part large black Spots appeared ; which were mortified Parts of that *Viscus*. The Gall Bladder was frequently empty. The *mesenteric Veins* in the Intestines, which all deliver their Blood into one large Trunk which constitutes the *Vena Porta*, were vastly turgid with Blood, and the whole intestinal Tube appeared livid ; the inner Coat being covered with a gangrenous bloody Slough, which when wash'd off the extreme mesenteric Vessels appeared blackish and turgid with Blood. Some appeared which, by their Contortions, minuteness and the tenuity of their Coats might be thought the lateral Vessels, or Glands which excretned in a natural State only *Lymph* or *Mucus* ; but being filled with Blood could not ascertain their Species.

There are still two manifest Causes of this Disease not yet mentioned ; one is when an Inflammation of the small Vessels constituting the larger arises : Which often happens from vehement Exercise or long continued Motion. This Case may be seen in Hares hunted, Bulls bated, &c. Here the Coats of the Arteries being inflamed, the circular Fibres of their muscular Coats are contracted into lesser Circles, and, at the same Time, the heated rarified Blood is forcibly expanded and presses strongly against the Sides of the Vessels ; Is it not evident that in these Circum-

stances some Part of the *Crassamentum* is most likely to be forced into the lateral Vessels? and what may be the Consequence was before remarked.

*Ruyfchius* takes Notice of a Man who died through extream Motion, in whom the Coats of the *Aorta* itself were inflamed, and from thence the Artery was contracted.

The other Case yet unobserved is, when the Fat in Persons abounding with it is melted by overheating the Body (or perhaps by the Heat of a *Causus*, or burning Fever) and is absorbed by the *mesaraic* Veins, and carried to the Liver where it stagnates in the *Vena Porta*, grows rancid; occasioning the worst Sort of Obstruction and Inflammation.

This was the Case of Capt. *Gerrard Sias* of *Liverpool*, who lodged at *Eleanor Ward's*: But he was happily relieved by a critical Discharge by Urine, which I took Care to encourage: The Urine for two Days appeared like very fat thick Broth: And I have seen it the Case of thin Persons as well as fat. These are (at least in my Opinion) a sufficient number of Causes either alone, or concurring with a *Plethora*, *Bellinian Lentor*, or what ever Alterations may happen without, or exist within; laying aside all *Chimeras* about occult Venom, Malignancy, Contagion from without, or a coagulating Acid within; which several learned Men have proved cannot exist in the Blood.

Most Persons who have been long in the Country; or have attended sick Strangers can make

a just Prognostic in this Fever ; even our Nurses. However shall give the following Remarks. If a Jaundice comes on soon 'tis bad, if with livid Spots (which sometimes, though but rarely appears) fatal. If the Skin continues obstinately dry and rough, the Case is very dangerous : And the more so as it longer continues ; for these very seldom recover, be the Pulse ever so good, or other appearances ever so favourable. The Pulse is not to be depended upon ; for many will have a good Pulse in this Fever a few Hours before Death. If the Vomitings are incessant, grow darker, and the Hiccup comes on it is generally fatal. If the Face is greatly flush'd ; and the Vessels on the *Tunica adnata* turgid with Blood, as in an *Optthalmia*, with a concomitant Phrensy, you may expect the Patients Death in a very little Time ; especially if the Skin is dry.

But if the Head continues clear, the Pulse is rendered soft, the Pains, Anguish and Nausea are relieved by bleeding ; and the humours which were forcibly thrown up from the Stomach are gently carried down by Solutives, the Patient afterwards is quieter, and those jactations cease, the Skin grows soft and moist and the Patient hath better Spirits 'tis probable he will recover for these are all good appearances.

I have often wondered that livid Spots are not often seen, considering the Blood is dissolved to such a degree sometimes as to force its way thro' the Skin itself ; or bursts out from some small Twig of an Artery on the Surface : and this Hæmorrhage is so violent it cannot easily be restrain-

ed. This was the Case of Doctor *Dwyer* and of several others.

Before we point out a Method of Cure drawn from the Nature and Symptoms of this Disease ; agreeable to the Precepts of the best antient and modern Physicians in similar Fevers ; and what is more confirmed by experience ; it may not be amiss to examine these Gentlemen's Reasons who are so fond of giving *Alexipharmics* and *Sudorifics* in the very beginning of this Fever.

These Gentlemen argue, That from some occult Venom, Contagion, Miasma, or *Je ne sais quoi*, the Texture of the Blood is broke, whence it is turned into a vapid and putrid Mass, no longer fit for the Uses of the animal OEconomy runs off through the Glands, strainers destined to excrete a much thinner Liquor ; therefore imagine the Blood to be in the same State as in pestilential Fevers and give Sudorifics and what are called *Alexipharmicks* as in the Pestis ; insisting the most likely Means to save the Patient is to keep open the Skin.

The yellowness they apprehend proceeds only from the broken texture of the Blood ; for say they, take the red globules of Blood, break them in a Mortar with the addition of a little Water and they will break into a yellow Fluid. This Theory seems to be built upon the supposition that a subtle elastic Air fills the *Spherulæ* of Blood ; which *Spherulæ* or globules when broke, and their elastic Air exhausted the Blood remains a vapid and putrid Mass no longer fit for the Secretions.

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Parts adjacent, volatiles and cardiacs will act in conjunction with it, and the descending Blood Vessels will be still more compris'd ; the dangerous consequences of which are obvious from what hath been said before. This digression upon the Sudorific or *Alexipharmick* Method I hope carries its excuse with it.

Since it is plain from a just attention to the Nature of the Disease ; as well as from the immediate Putrefaction and livid Colour of Persons who dye of this Fever, and inspection of their Viscera ; that whatsoever is the Cause, the Disorder may be justly termed a general Inflammation often (if not prevented) terminating in a general gangrene or Death : So that we are to endeavour by all possible Means to prevent this general gangrene. And here let us consider by what Means Nature endeavours to help herself. Let us follow the Foot-steps of that wise Guide ; and not contradict her in her Intentions, or counteract her as too many do.

The critical Discharges here are uncertain as the critical Days. Sometimes we have a crisis by the Skin in Sweat, Eruptions, or small Boils ; which as was before observed, are the most favourable and surest terminations of all Fevers in this Country ; often by a Diarrhœa, or Urine. Twice I have seen a crisis by a Bubo and Parotis as in the Plague. Hæmorrhage from an Artery is sometimes critical and saves the life of the Patient ; at other Times (and that frequently) it carries them off.

*Hippocrates* that accurate observer of Nature and her Operations and Endeavours, speaking of a Fever with a concomitant Jaundice, says, *Quosdam etiam sexto die morbus regius prehendit, verum istos per vesicam expurgatio, aut commota alvus, aut copiosa Sanguinis e naribus profusio sublevavit.\**

We shall now consider the evacuations that may assist or contradict Nature, how best to promote those Discharges are critical, and in what stage of the Fever such evacuations are proper. As to Sweats I think enough hath been said to prove they should not be attempted by Sudorifics; nor can be expected from the Use of them.

Vomits too are very injudiciously administered; for vomiting is always here symptomatical proceeding from the Inflammation of the Liver and Parts adjacent (as before observed) for were it critical as *Decker* takes Notice † then relief would ensue from the exhibition of a Vomit: But experience convinces us of the contrary. *Barbette* says Vomiting and Hiccup are concomitant with an Inflammation of the Liver. ‡ And that this symptomatical Vomiting is very dangerous. || If this troublesome Symptom is not prevented in the beginning it grows more and more Violent, so as to prevent the Sick from taking Drink, Food, or Medicine, until it comes to the Vomiting of black Blood mixed with adust Bile and the sharp Juices of the Stomach.

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\* *Epidem Lib. 1.*

† *D. vomitu.*

‡ *Prax. M d.*

|| *Vide Deckers's Remarks on Barbette published in Latin, at Leyden.*

It then appears to be our Duty to suppress or mitigate this Vomiting if possible: or to prevent by keeping open the Body with Solutives from the beginning; and by that Means direct the course of the Bile and other sharp Humours downwards. These Solutives should be continued (at least) untill the State of the Fever.

*Hippocrates* takes Notice; and so does *Celsus*, that a looseness suppresseth Vomiting: We are convinced by Experience it doth in this Fever. Further it will appear plain to any one who understands the animal OEconomy, or the mechanism of Vomiting, that where there is any Inflammation of the Viscera, Vomiting must very much increase the Mischief; and also how likely it is to bring on an Inflammation of the Diaphragm and intercostal Muscles; whence incessant Vomiting and that dreadful Symptom Hiccup.

Now let us consider bleeding an evacuation that hath been much disputed about. And here I must be of Doctor *Sydenham's* Opinion, when Speaking of the Plague itself, he says, *They who condemn bleeding have not bled in Time, or else too sparingly.\**

Bleeding seems highly necessary in the beginning of this Fever; not only in easing the Pains and Anxiety which are a great Part of the Disease; but also in reducing the degree of Heat; for as *Wainwright* observes, *The heat of an animal is in a compound Proportion of his quantity of Blood and the celerity of its Motion.†* So that by diminishing

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\* *De peste.*

† *De morbis acutis.*

nishing the quantity of Blood we lessen the Heat and Thirst ; for fewer of the thin Parts will be dissipated ; and consequently by this we reduce in some Degree the Fever. Besides the Heat acts as a universal Stimulus, whereby the Diameters of all the Vessels secretory and excretory are straitened ; so that we cannot expect any relieving glandular Discharge until we have lowered the Degree of Heat. We ought then by all possible Means to diminish the Heat, to suppress the Outrage, Rarefaction and Efflatus of the Blood thereby preventing the Formation of the Fever; and its dreadful Consequences : For if we cannot prevent the Formation of the Fever, we can do but little in the Course of the Disorder : It proving of very bad Consequence to endeavour to force a Crisis when the Fever is formed and fixed upon the whole System. This is agreeable to the precept of the divine old Man, *Incipientibus morbis si quid movendum videatur move ; vigentibus vero quiescere melius est.* § This Author advises bleeding in acute Disorders where the Disease is violent and the Patient in the flower of his Age, or hath sufficient Strength to bear it, † *Aretæus* who amongst the Antients was next to *Hippocrates* says, if there is any remarkable Inflammation in the Liver or Præcordia, we should bleed the Patient *ad deliquium.*

*Riverius*

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§ Sect. 2. aphor. 29.

† *At in morbis acutis sanguinem detrahes, si vehemens fuerit morbus, & qui ægrotant ætate florenti fuerint & virium robore valuerint, de ratione vict. in morb. acut. 396.*

*Riverius* speaking of the Plague says, *Si vero ipso morbi initio & viribus adhuc vigentibus vocatur medicus, & aut plethoram, aut febrem adesse advertat, metusque sit ne ad Cerebrum aut partem aliam principem fiat metastasis Sanguinis fieri videatur missio, & eam instituere intrepide poterit Medicus, habita tamen, naturæ Ægrotantis, & virium ratione, sic etenim modo dicta præcavebuntur imminencia pericula, febris compefcetur & majus Spatium Sanguini ad circuitum suum continuandum procurabitur.* The *Arabians* bled plentifully in all ardent Fevers and in most acute Disorders. *Prosper Alpinus* takes Notice that the *Ægyptians*, who are obnoxious to ardent and inflammatory Fevers not unlike these we have in *Jamaica* bleed in all Ages, Sexes, and Constitutions with great Success. \* And *Bontius* says he did the same in the ardent Fevers in the *East-Indies*. *Galen* says we ought to regard only the Strength of the Patient and bleed proportionably. *Willis* says the Hæmorrhages before and after Death plainly demonstrate it was Wickedness to omit bleeding. Notwithstanding I think from the Reasons and Authorities above corroborated by Observation and Success in Practice, that we should bleed plentifully in plethoric northern People who have the thickest and reddest Blood with tenie elastic Fibres; yet after the first Stage, or beyond the Increment of the Fever it cannot be so proper; as it may interrupt Nature in her Intentions and prolong the Crisis if it does no further Mischief.

Nor

Nor should we bleed in my Opinion after the Vessels are in any considerable Degree relaxed.

*Arteriotomy* is much commended by some of the Antients in all high and inflammatory Disorders where the Blood hath too great a Degree of exaltation.

I have several Times divided the temporal Artery with great Success where the Patient was seized with a Delirium or Phrensy on the very first attack of the Fever: which happens sometimes to those Persons whose Fever arises from extreme Motion in the heat of the Sun.

An Argument for *Arteriotomy* (in my Opinion a very good one) is, many Persons in the highest Degree of this Fever have been saved by an Hæmorrhage from an Artery; even when there was not the least Hopes or Prospect of Recovery. This happened in the Case of the Hon. *Washington Shirley*, Esq; Commander of his Majesty's Ship the *Renown*, who in the beginning had lost a considerable quantity of Blood, yet several Hours after Cupping upon the Shoulders when the Scarifications were closed, the Blood forced its way through, and he bled three or four Days; and the Scarifications although very superficial were cauterized by his own Direction to stop the bleeding at last. This was the Case of Mr *Jones* the Attorney (and many others) who bled immoderately from the Nose, had the Vomiting of black Humours and Hiccup, yet recovered by the Hæmorrhage.

*Arteriotomy* or Cupping with scarifications seems to excell *Venæsection* for the following Reason;

Reason: Those Persons who die of ardent Fevers, or acute Disorders, have their Arteries full and Veins empty; on the contrary, those who die with slow Fevers, or chronic Disorders have the Veins full and Arteries empty.\*

Solutive purges and apozems with Manna. &c. seem to be absolutely necessary in the beginning of this Fever; for they cool and ease the Patient immediately, moderate the Heat, Thirst and Anxiety, prevent (as was before observed) that terrible symptomatic Vomiting so troublesome in the Course of the Disease! Besides Solutives are plainly indicated by Nature; for a spontaneous Diarrhœa is always a favourable Appearance in the beginning of this Fever: therefore where there was not one, I have always endeavoured to bring one on.

The Ejections discharged here are generally hot, sharp, cholerick or bilious; fermenting like Yest, and commonly very fœtid: And as these are immediately derived from the Liver, Spleen, Pancreas, &c. they must, and do wonderfully relieve in this, and in all central Fevers, those Viscera.

In the epidemic bilious Fever at *Pisa* Anno 1661, those who recovered were relieved by a Diarrhœa.†

One of the divine *Hippocrates* his Precepts is to Purge in very acute Diseases the first Day, if there is a Propensity of the Humours to go off  
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\* *Bonetus in sepulchreto anatomico, & Herman. Boerhaave de febribus in genere.*

† *Borell. apud Malpigh. vit. posth. p. 21, 22;*

that way ; for delay in this Case is bad \* and, by the way, his Purges were none of the mildest.

*Riverius* in the Plague itself advises Purging where there is *interna humorum corruptio* † and that there is here the very fœtid Ejections demonstrate.

Sometimes it happens we are call'd in too late, when the Vomiting is so violent that no solutive Medicines such as Manna, &c. though assisted with lenient Clysters will divert the Course of the Humours ; nor will antiemetics stop the Vomiting any considerable Time.

In these Circumstances I have ventured to give (and it succeeded beyond my Expectations) twenty or thirty Grains of Scammony or Jallap, in an antiemetic Draught, repeating it if thrown up, or not answering my Design in a little Time.

I know the exhibition of these rough Cathartics in a Fever will be look'd upon as strange Practice ; and I have no Example or Authority to support it among the Moderns. Indeed the Antients from *Hippocrates* down to *Asclepiades* (except the School of *Erasistratus*) gave Purges in acute Fevers ; and their Purges were most of them rough and vellicating. *Hippocrates* expressly directs Scammony where the Stools are Bilious. ‡

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\* *Sec. 4. Aph. 10.*

† *Ubi Corpus cacochymicum invadit Pestis aut huic interna humorum corruptio.*

*River. reformat. de Peste.*

‡ *Alvique egestiones biliosæ fuerint, Scammonio exhibito moderate purgandum.*

*de Rat. viâ. morb. acut. 401.*

What induced me to try Medicines of this Kind was (what hath been taken Notice of before) that where there was a smart Diarrhœa (spontaneous or procured by Medicine the Vomiting never was violent, if any at all: And the Diarrhœa proved very serviceable in relieving or abating all the other Symptoms.

Further I considered the Stomach would not bear any great Quantity of the most agreeable Liquor, much less a sufficient Dose of Manna or any other lenient Purge or solutive Medicine; which at this Time must be given in a great quantity to increase the Peristaltic Motion of the Intestines considerably; thereby forcing the Humours strongly downwards. The Antiemetick Draught generally stops the Vomiting for a little Time, until the *Cathartic* passes the *Pylorus*: So that it generally answered the Intention, relieving that troublesome Symptom, cooling and easing the Patient, and reducing, in a considerable Degree the Pulse, Pain and Anxiety.

Clysters solutive and emolient are of great Service, as they are an immediate Fomentation to all the Bowells of the *Abdomen*; promote Perspiration internally, soften and relax the tense and heated Intestines, and gently sollicit the evacuation of the Bile and other offending Humours.

The Use of Clysters is so manifest, so obvious (especially during the ardency of the Fever) that I have no further Occasion to insist on their being Serviceable; or to bring Authorities (many of which I could) to support my Opinion.

Blisters, the Use and Abuse of them, at what Time and in what Circumstances they should be apply'd, requires much Care and Consideration, for they are often beneficial in Fevers, and often very pernicious.

First, it may not be amiss to examine their Action on the human Body, Secondly, to examine the Opinion of a Gentleman justly celebrated for his medicinal Knowledge throughout all *Europe*, who speaks much against Blisters \* and Lastly conclude with some Observations of the learned Doctor *Mead* upon the Use of Blisters, with our own Observations and Reasons.

Blisters act by increasing the reciprocal Oscillations between the Solids and the Fluids, stimulating, irritating, and exagitating the whole System ; as is plain by the bloody Urine and Strangury the Occasion : Hence it seems they cannot be good in the beginning of ardent Fevers where all irritation increases the general Inflammation ; and every Cause of Inflammation increased, it soon goeth into a Gangrene. Yet these have been often applied in the very beginning of ardent and highly rarefactive Fevers by some that Practice in *Jamaica* ; and without previous Bleeding, relaxation, or considerable Evacuation of any Kind !

The learned *Boerhaave* says of Blisters, or Cantharides. *Totum genus nervosum stimulant Fibrillas & solvunt, and, puto vero maxime nocere ubi humores nimis soluti & acres sunt, nec in morbis acutis, nec in inflammatione convenire, nec ubi est inclinatio*

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\* *H. Boerhaave Prax. Med.*

*natio in alcali, & miror quod a tot egregijs Viris adhuc laudantur, nam faciunt Febrem maximam, Anxietates, halitum cadaverosum, Urinam foetidam, &c.*

Doctor Mead's Observations on the Use of Blisters, are contradictory to Doctor Boerhaave's Opinion, and are confirmed by Experience: For he says, That in the confluent Small-Pox where the Blood was in such a State of Dissolution, livid Spots appear'd, and Blood was discharged from the Emunctories, he applied Blisters with Success where the Patient was delirious.

I am far from believing that Doctor Boerhaave himself would forbid the Use of them in all Stages of acute Fevers: For certainly they are often indicated by Nature; particularly when she endeavours to throw out an Eruption, which is always critical; and if Nature, or the *Vis Vitæ* (which I mean by Nature) hath not Strength sufficient to do her Work, it seems highly necessary that we should assist her.

After the first Irritation, caused by Cantharides, is over, their subtle active Salts dilute the Blood by restoring the circulation of the *Lymph*: For I suppose these scour the Lymphatics as Cathartics do the intestines—break and attenuate the putrifying, stagnating Serum and fit it for Excretion through the Skin, whence that *Halitum cadaverosum* Doctor Boerhaave mentions. These Salts also break and attenuate the putrifying stagnating Bile; fit it for excretion by the Kidneys and carry it off that way with some of the grosser Parts  
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of the putrifying Serum, &c. whence that *Urinam foetidam*, this learned Author takes Notice of.

In all *central Fevers*, Blisters are certainly serviceable by transferring the Inflammation to the Superficies, by preventing an Inflammation of some noble *Viscus*, by relieving the Convulsions of the Diaphragm and intercostal Muscles, occasioned by the Afflux of hot, sharp rarified Blood on those Parts; whence a continual Vomiting: that being a Convulsion of the Diaphragm and intercostal Muscles; as Monsieur *Chiroux* proves by Experiment.

Experience teaches us that Blisters mitigate violent Vomiting and Hiccup: Yet I would by no Means recommend the Use of them in the beginning of Fevers, whilst the Fervor of the Blood and Tensity of the Vessels continues: For it is then our Business to suppress the Fervor and *Ejfflatus* of the Blood, and relax the Solids.

After all, Blisters in my Opinion are seldom necessary in this Fever: In some few Cases I have found them serviceable; but they ought never to be apply'd without due Care and consideration.

And if we do apply them we should supply the Patient plentifully with diluents and smooth cooling Drinks, such as Emulsions with Gum. arab. &c. And indeed these are necessary almost through the whole Course of the Fever: But now should be given in greater Quantities to sheath and dilute the caustic Salts of the Cantharides.

In this Fever, as in most acute Disorders, diluting and relaxing Diet and Medicines are most proper.

per ; and the Patient should be kept cool as possible ; by no Means stifling him up with a load of Bedcloaths, or excluding the Air from him, according to Doctor *Boerhaaves* \* and excellent *Celsus* his Advice ; who speaking of a Patient in a Fever says, *etiam amplo conclavo tenendus, quo multum & purum aerem trahere possit : Neque multis vestimentis strangulandus.*†

It would be very happy for poor sick Strangers if we could get them large perfused Rooms instead of the Holes they are cramm'd into. What convinces me this last Precept is Right, I have often observed that those Persons who had this Fever on board of the Vessels in the Harbour, who seldom drank any Thing but cold Water, no Beds to lye on, or Cloths to cover them, with a free admission of Air, frequently recovered.

Such Things as relax and dilute must be proper here, for all the Fibres are tense and dry : And so long as the Heat, Siccity, Thirst, and Swift Pulse continue, so long all diluents, the thinnest Fluids are proper : Water itself is Convenient ; for the Drought, and Contraction of the Vessels are a very great Part of the Disorder.

The warm Bath, or rather partial Fomentations with Vinegar and warm Water must be very serviceable, as they relax and cleanse the cuticular Glands.

Acids of which this Country produces the finest in the World ; and perhaps the greatest Variety, must

\* *Prax. Med.*

† *Lib. 3. Cap. 7.*

must be very serviceable: So must Vinegar and Water mixed; and acid Medicines such as *Spt. Vitrioli, ol. Sulph. per campanam, Spt. nitri dulc. &c.* The neutral Salts much diluted and given in small Quantities, else they increase Thirst: all these must be very usefull judiciously exhibited: So must solutive acid Fruits such as Tamarinds and Cassia boiled in Water for common Drink according to the Manner of the *Ægyptians* as *Prosper Alpinus* observes \*

*Jamaica* Sorrel or the Jelly of it dissolved in Barley Water, and all our fine vegetable Acids are not only most agreeable to the Sick, but are also the most serviceable, as they abate the Inflammation, allay Thirst, resist that general putrifaction of the Juices, correct the Bile, promote its discharge by Urine, and gently open the Body. So Manna also dissolved in Barley Water and acidulated with Lime or Lemon Juice is a very pretty Draught; and might be frequently taken to keep the Belly soluble; and by that Means ease the Anxiety, Heat and Pain.

*Bristol* hot-well Water when it arrives here seems to be only the purest Water; having lost all the Minera or Calx it may be impregnated with at the Well; 'as it is a pure cool Drink, vastly agreeable to the Sick it may be drank plentifully after the Increment, about the State of the Fever; then there cannot be a better Liquor used to dilute, cool and temper the hot, inflamed and almost boiling Blood; as well as to promote any critical Discharge.

*Galen*

*Galen* recommends the drinking of cold Water in continual Fevers ; so do the *Arabian* Physicians, particularly *Avicenna*, who gave it through the whole Course of ardent and bilious Fevers, as he says, to allay Thirst, and to temper and promote the Concoction of the Bile \* indeed warmed Liquors or tepid, are the best in the beginning because they relax most. The Divine *Hippocrates* in acute Disorders gave Pisan of Barley and the coolest and thinnest Food † *Willis* Barley-water with Honey and Vinegar. *Boerhaave* recommends in all Disorders where the Juices are inclined to putrify; Tamarinds, Juice of Lemons, Rhenish Wine, Butter-milk strained through Flannel to take out the Butter and Cheese. He says the poor People in *Amsterdam* at the Time of the Plague drank a mixture called *de tribus*, the Basis of which was Vinegar; by the Use of which Liquor many recovered.

*Tachenius* in a severe Plague in *Italy*, says he preserved himself and several others by the Use of acid Spirit of Sulphur.

*Sydenham* says, in that worst sort of Small-pox where the Humours were so strongly inclined to putrify that nine out of ten died; which as he observes, scarcely happens in the Plague itself: And until he gave the Spirit of Vitriol plentifully in Small-beer he found no remedy.

I have found the following Medicine to be very useful in the beginning of this Fever.

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\* *Lommus de febris us continuis.*

† *De rat. vict. morb. acut.*

**R** Spt. nitri dulcis  
 ----- Salis dulcis aa Drachmas duas.  
 --- Vitrioli Drachmam unam, misce Sumat  
 gr. xxx vel xl Subindè in quovis vehicu-  
 lo.

This Medicine greatly resists putrefaction, and corrects the Bile ; for it is exceeding serviceable in some kinds of Jaundice as well as in this Disease.

From all these Observations we may fairly conclude, Acids must be of great Use here where the Juices are so strongly inclined to putrify. But it is to be observed, that Acids should not be given through the whole Course of ardent and putrid Fevers ; but only so long as the *alkaline putridity* continues.

As the fatal termination of this Fever is a general Gangrene; and the peruvian Bark is the best Remedy known in a local Gangrene ; we are ready to conclude from Analogy, that it must be good here, until Experience convinces us of the contrary.

It may not be amiss to examine why this noble Medicine given in the remissions of this Fever does not answer our Intention. The action of the Bark renders the Fibres more tense and elastic, and enables them to subdue that Lensor in the Blood the cause of intermitting Fevers : To account philosophically for its Action is not to our Purpose : We can only say then, from the specific configuration of its Particles it hath these Effects : But here that very Action and those Effects produced from the Bark are very Pernicious : And must be particularly so when the cause is an  
 Inflammation

Inflammation of the small Vessels constituting the larger. The Mischief must be increased, it is very obvious, from the rough constringing and stimulating Power of the Bark. Our utmost endeavours here should be to relax the Vessels; for the Tensity of the Vessels will hinder all the glandular Discharges; and must also increase the Pains, Heat, Soreness, Anxiety, Thirst, &c.

In a particular Gangrene in an extreme Part where the circulation is languid, and the Vessels weakned with contusion, or any Thing which hath occasioned too great an Afflux of Blood on the Part for sometime, by which continued *Plethora* the Vessels are Overstretched, and their contractile restitutive Power in some Degree lost; or in old Age where the Blood is vapid, the Case is quite altered; for here is no increas'd tensity of the Solids, nor *undue exaltation* of the Blood. Young robust Persons who have the tensest Fibres are most obnoxious to this Fever; to these also it proves most Fatal: Women and Men of lax habits are seldom seized with it; or when they are come through with much less Danger and Difficulty.

This leads us to take Notice how fatal this Fever hath been to Strangers, *Europeans* and *North Americans*, especially to those who abound with a great quantity of good Blood rich with Salts\* are in the heat and prime of Life, and whose Fibres

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\* *Omnis homo qui perfecte Sanus est & abundat bono Sanguine, ille etiam est callidissimus, ideo nullus homo pronior est ad putredinem quam ille.*

are tense and elastic : These are most obnoxious to Inflammations for the Reasons before given † and are with the greatest difficulty cured. ‡

When a Stranger arrives here from a *Northern* Climate the Blood must be in some Degree rarified ; Which Rarefaction may be called a Plethora ; for the Vessels do not relax immediately in Proportion. The circulation is now rendered quicker by the Stimulus Heat, whence all the secretions, recrementitious and excrementitious are increased ; except perhaps, the two expurgatory by Stool and Urine, by which only the Bile can be carried off, that is now separated in a greater Quantity than usual by the increased circulation, heat of the Climate, Use of spirituous Liquors, or whatever causes may increase the Bile : Hence a redundancy of Bile, which together with that stiffness of the Fibres, and richness of the Blood, are obvious and sufficient Causes of their proneness to this Fever.

Since this appears to be the Case, would not a Method of preventing the redundancy of Bile, taking away the plethora, and relaxing the Pores be highly expedient for all Strangers at their first Arrival ; to be continued until such Time their Solids were relaxed, and Juices assimilated to the Air of the Country ?

The Method I would propose is this. Upon the arrival of a Person with a *Northern* Constitution

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† *Qui habent temperiem calidam morbis acutis Sunt valde obnoxij.*

‡ *Hinc homines putrifactionibus obnoxij & qui habent Sanguinem ruberimum crassissimum & Fibras rigidas difficilime ab hoc morbo curantur.*

tion let Blood be drawn from his Arm if sanguine and plethoric : This bleeding will lessen the Degree of Heat, and abate the Nisus of the Particles of the Blood. After bleeding (if no favourable Lax intervene) take some solutive Purge, such as Manna and Cream of Tarter once or twice a Week, sufficient to move the Belly three or four Times. Use every Day for some Time a warm Bath to relax the cuticular Glands and promote a free Transpiration, as well as cleanse them of any Sordes that may obstruct ; rub dry with a Cloth and anoint with a small Quantity of fine Oyl according to the Custom of the Antients, to prevent what is commonly call'd catching of Cold : This warm bathing appears to me to be of great Consequence ; therefore I think should not be omitted. Perhaps bleeding again, or at certain Periods may be requisite : But this should not be ventured upon without Advice ; nor indeed Bathing or Purg- ing : For these ought to be proportioned to the Constitution, Habit, Age, Sex and Temperament of the Person ; some requiring to bathe long and often, others seldom or a short Time ; others who have Habits sufficiently relaxed not at all : And Persons too much relaxed should rather use the cold Bath.

To keep the Body cool, and to afford a constant supply to the Blood whose thinner Parts may be exhausted, or too much dissipated by Exercise or the Heat of the Climate, drink small but frequent Draughts of Sherbet or very weak acid Punch. A Draught in the Morning may not be amiss to cleanse the urinary Passages where some foulness  
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are apt to be accumululated during Sleep: Or perhaps Tamarind Water, Orange Whey, or sucking some of our acid Fruits would answer the Intention as well; for as was before observed, acid Fruits and acidulated Liquors cool and condense the Blood, resist Putrefaction, correct the Bile, and promote the Discharge by Urine.

As to Diet that which is light, cool, easy of Digestion and *acescent* is the best, because it prevents the *alkaline putridity* of the Juices. But I would by no Means advise any particular Form; because it is very certain that free Livers, provided they fall into no Excesses, are not more liable to the ardent Fevers of this Country than the most temperate and exact; or if they do fall into them escape the best. Vinegar and Salt resist Putrefaction; and upon that Account seem to be necessary: In my Opinion it would not be amiss to use them freely with all animal Food.

Nothing conduces more to the preservation of Health in this and all *Southern* Countries than a proper regulation of the Passions of the Mind. I say in this and all *Southern* Countries, because in *Northern* Countries the Effects of the Passions are not so violent, or so soon discernible; they may help to lay the Foundation of chronic Disorders in *Northern* Countries; but here they will immediately bring on acute Diseases: Thus violent Anger or extream Grief will immediately, or in a few Hours, bring on a Jaundice, or bilious Fever; and the fear of dying, perhaps, kills more than the Climate.

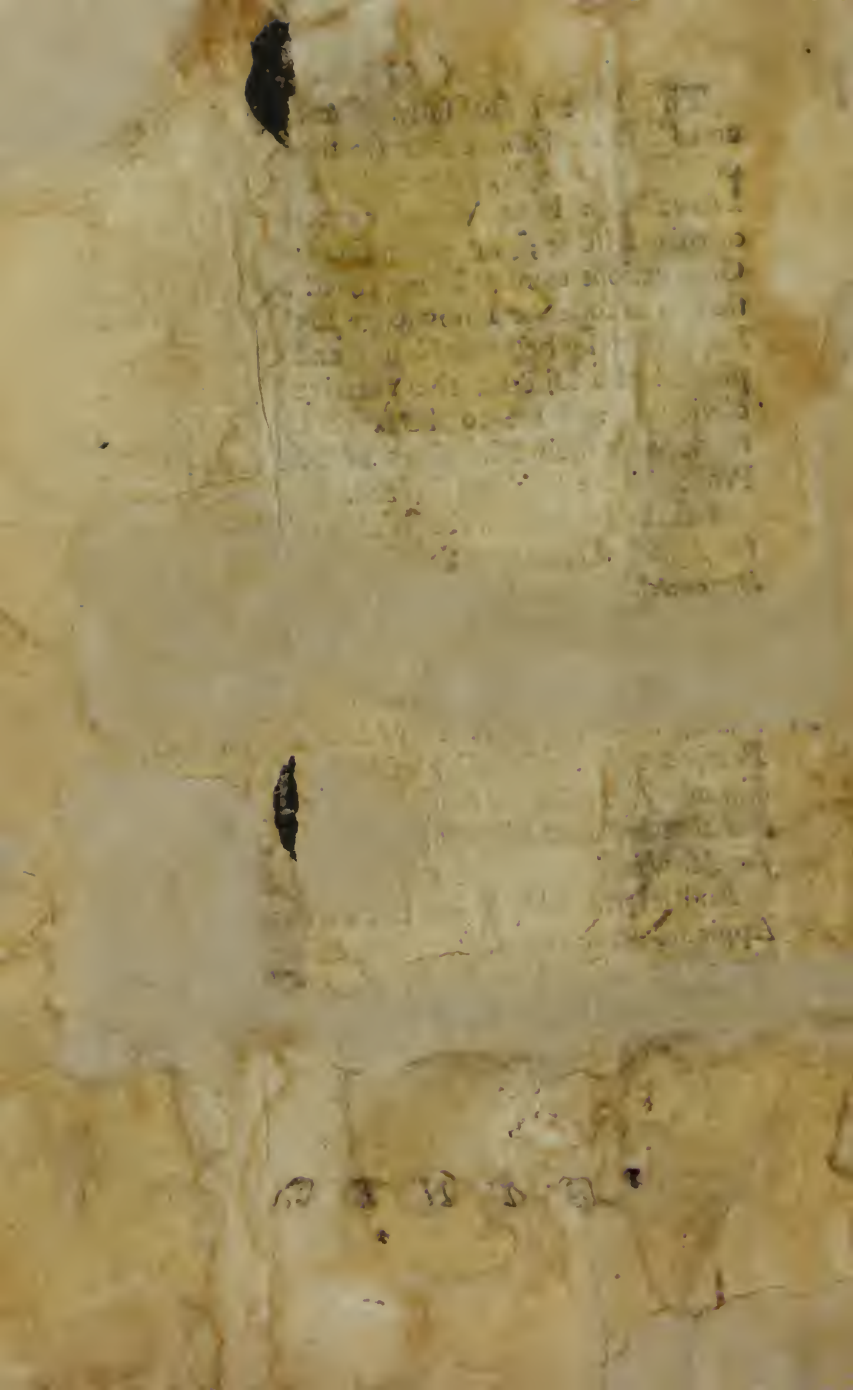
Thus.

Thus have I faithfully described the Nature and Causes of this Fever (as they appear to me) pointed out the *juvantia* and *lædientia* ; and hope I have laid a Foundation for a perfect Knowledge of this Disease ; or given such useful Hints and Observations as may be improved by some Gentleman of superior Knowledge in the medical Art. I apprehend when the Nature and Causes are explained of a Disease, the curative Indications are obvious ; and are to be found by Experiments made with such Medicines as from their known Properties are likely to succeed.

I shall conclude in the Words of the great Doctor Mead, *I have now finished this Essay such as it is, contentious and ill natur'd Men, may probably find Fault with it, but I hope will prove usefull to my Countrymen ; which is to be desired above all Things : For a consciousness of an useful Undertaking and an upright Mind is beyond all kind of Praise : This Satisfaction will never be wanting to him who shews that he has the public good at Heart ; and that he thinks himself not born for himself but for Mankind.*

And let me add, I fear not Censure nor desire Applause : He that disapproves of this Essay, let him shew his dislike by Writing *counter on the Subject* and I shall be satisfied.

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